

We claim:

1           1.     A probe for use with an outer member having a wall defining an  
2 interior bore, the probe comprising:

3                 an elongate body, defining a distal region, a distal end and a  
4 proximal region, adapted to be carried within the outer member interior bore;

5                 an inflatable tissue coagulation body supported on the elongate  
6 body distal region; and

7                 a control element defining a distal portion associated with the distal  
8 end of the elongate body and a proximal portion extending along the exterior of  
9 the elongate body toward the proximal region of the elongate body.

1           2.     A probe as claimed in claim 1, wherein the elongate body  
2 comprises a catheter body.

1           3.     A probe as claimed in claim 1, wherein at least the distal region of  
2 the elongate body includes a flexible spline.

1           4.     A probe as claimed in claim 3, wherein the flexible spline includes a  
2 hinge portion.

1           5.     A probe as claimed in claim 4, wherein the inflatable tissue  
2 coagulation body is proximal to the hinge portion.

1           6.     A probe as claimed in claim 4, further comprising:  
2                 at least one sensing element;  
3                 wherein the inflatable tissue coagulation body is located one of  
4 distal to and proximal to the hinge portion and the at least one sensing element  
5 is located the other of distal to and proximal to the hinge portion.

1           7.     A probe as claimed in claim 1, wherein the inflatable tissue  
2 coagulation body comprises a half-balloon structure.

1           8.     A probe as claimed in claim 1, wherein the inflatable tissue  
2 coagulation body includes micropores.

1           9.     A probe as claimed in claim 1, wherein the inflatable tissue  
2 coagulation body comprises a heated structure.

1           10.    A probe as claimed in claim 1, wherein the control element  
2 comprises a pull wire.

1           11.    A probe, comprising:  
2                    an outer member defining a distal end and including a wall defining  
3 an interior bore;  
4                    an elongate body carried within the outer member interior bore and  
5 defining a distal region and a distal end operably connected to the distal end of  
6 the outer member; and  
7                    an inflatable tissue coagulation body supported on the elongate  
8 body distal region.

1           12.    A probe as claimed in claim 11, wherein the wherein the elongate  
2 body comprises a catheter body and the outer member comprises a sheath.

1           13.    A probe as claimed in claim 11, wherein at least the distal region of  
2 the elongate body includes a flexible spline.

1           14.    A probe as claimed in claim 13, wherein the flexible spline includes  
2 a hinge portion.

1           15.    A probe as claimed in claim 14, wherein the inflatable tissue  
2 coagulation body is proximal to the hinge portion.

1           16.    A probe as claimed in claim 14, further comprising:  
2                    at least one sensing element;

3 wherein the inflatable tissue coagulation body is located one of  
4 distal to and proximal to the hinge portion and the at least one sensing element  
5 is located the other of distal to and proximal to the hinge portion.

1 17. A probe as claimed in claim 11, wherein the inflatable tissue  
2 coagulation body comprises a half-balloon structure.

1 18. A probe as claimed in claim 11, wherein the inflatable tissue  
2 coagulation body includes micropores.

1 19. A probe as claimed in claim 11, wherein the inflatable tissue  
2 coagulation body comprises a heated structure.

1 20. A probe as claimed in claim 11, wherein the outer member defines  
2 a distal region and the distal region of the outer member includes a slot.

1 21. A probe for use with an outer member including a wall defining an  
2 interior bore, the probe comprising:

3 a tissue coagulation body; and

4 an elongate body, defining a distal region that supports the tissue  
5 coagulation body, adapted to be carried within the outer member interior bore  
6 and extend outwardly from the interior bore such that the distal region forms a  
7 loop, the elongate body including a hinge portion defining the apex of the loop  
8 formed by distal region, the hinge portion having a flexibility that allows the apex  
9 of the loop to be inserted into a pulmonary vein to such an extent that the tissue  
10 coagulation body will be substantially aligned with the pulmonary vein ostium.

1 22. A probe as claimed in claim 21, wherein the elongate body defines  
2 a distal end and a proximal region, the probe further comprising:

3 a control element defining a distal portion associated with the distal  
4 end of the elongate body and a proximal portion extending along the exterior of  
5 the elongate body toward the proximal region of the elongate body.

1           23. A probe as claimed in claim 21, wherein the loop defines a length  
2 and a height and the flexibility of the hinge portion is such that the loop length  
3 will be at least two times the loop height.

1           24. A probe as claimed in claim 21, wherein the elongate body  
2 comprises a catheter body.

1           25. A probe as claimed in claim 21, wherein at least the distal region of  
2 the elongate body includes a flexible spline and the hinge portion is formed in the  
3 flexible spline.

1           26. A probe as claimed in claim 21, further comprising:  
2           at least one sensing element;  
3           wherein the tissue coagulation body is located on one side of the  
4 hinge portion and the at least one sensing element is located the other side of  
5 the hinge portion.

1           27. A probe as claimed in claim 21, wherein the tissue coagulation  
2 body comprises an inflatable tissue coagulation body.

1           28. A probe as claimed in claim 27, wherein the inflatable tissue  
2 coagulation body comprises a half-balloon structure.

1           29. A probe as claimed in claim 27, wherein the inflatable tissue  
2 coagulation body includes micropores.

1           30. A probe as claimed in claim 27, wherein the inflatable tissue  
2 coagulation body comprises a heated structure.

1           31. A method of forming a lesion in tissue associated with a body  
2 orifice, comprising the steps of:

3                 deploying a probe, including an elongate body having a distal  
4 portion and a tissue coagulation body supported on the distal portion, to a  
5 region adjacent to the body orifice;

6                 forming a loop defining an apex with the distal portion of the  
7 elongate body;

8                 inserting the apex of the loop into the orifice;

9                 contacting a portion of the tissue associated with the orifice with the  
10 tissue coagulation body while the loop is located at least partially within the  
11 orifice; and

12                forming a lesion in the portion of the tissue associated with the  
13 orifice with the tissue coagulation body.

1           32. A method as claimed in claim 31, further comprising the steps of:

2                 adjusting at least one of the loop and the tissue coagulation body  
3 such that the tissue coagulation body is taken out of contact with the portion of  
4 the tissue associated with the orifice;

5                 rotating the loop relative to the orifice;

6                 contacting a second portion of the tissue associated with the orifice  
7 with the tissue coagulation body while the loop is located at least partially within  
8 the orifice; and

9                 forming a lesion in the second portion of the tissue associated with  
10 the orifice with the tissue coagulation body.

1           33. A method as claimed in claim 31, wherein the step of deploying a  
2 probe comprises deploying a probe including an inflatable tissue coagulation  
3 body and the step of contacting the tissue comprises inflating the tissue  
4 coagulation body.

1           34. A method as claimed in claim 31, wherein the step of deploying a  
2 probe comprises deploying a probe including a pull wire through an outer member  
3 and the step of forming a loop comprises urging the elongate body through the  
4 outer member while applying tension to the pull wire.

1           35. A method as claimed in claim 31, wherein the step of contacting a  
2 portion of the tissue comprises engaging tissue with respective portions of the  
3 loop located on opposite sides of the apex.

1           36. A method as claimed in claim 31, wherein the step of forming a  
2 lesion comprises transmitting energy to the tissue.